

frames of the commodity shelf 80, and are fixed parallel to each other. The sliding members 23a and 23b are respectively screwed to the linear-motion rails 22a and 22b. The linear-motion rail 22c is attached to the sliding members 23a and 23b and is perpendicular to the linear-motion rails 22a and 22b. The sliding member 23c is screwed to the linear-motion rail 23c. The TV camera 20A is mounted on the sliding member 23c, and is angularly moved in the direction of the double arrow " $\theta$ " in FIG. 4B by a non-illustrated driving motor.

The linear-motion rails 22a, 22b, 22c are angularly moved by non-illustrated motors. The non-illustrated motors rotate the linear-motion rails 22a and 22b in synchronism with each other so that the sliding members 23a, 23b, and 23c, each serve to the respective linear-motion rail 22a, 22b or 22c, and the TV camera 20A all together move in the horizontal direction (in the direction of the double arrow "X"). Rotation of the linear motion rail 22c simultaneously moves the sliding member 23c and the TV camera 20A in the vertical direction (in the direction of the double arrow "Y") along the linear-motion rail 22c.

The camera controller 13A and the motor driver 15a control the non-illustrated motors that control rotation of the linear-motion rails the 22a, 22b,

22c and the TV camera 20A thereby remote control the position and the direction of the TV camera 20A in a state of taking as images of the object commodity.

As mentioned above, an inventory employee  
5 transmits necessary instructions to the shop  
(control computer 10A) from the inventory computer  
50A or 50B, or the mobile information terminal 50C  
to remote control the state of TV camera 20A as taking  
an image of an object commodity and to remote operate  
10 the TV camera 20A to take an image of an object  
commodity, via the camera controller 13A, the motor  
driver 15a, and the camera positioning device 21A.

With this controlling of the TV camera 20A,  
it is possible for an inventory employee to obtain  
15 various images of the selling area using the  
inventory computers 50A and 50B, and the mobile  
information terminal 50C, thereby reducing mistakes  
in counting object commodities or the like. As a  
result, a reliable inventory can be guaranteed based  
20 on the images received from the shop.

If a security camera previously installed at  
the shop is used as the TV camera 20A, the  
tele-inventory system 100 can be constructed at a  
reasonable cost.

25 (A-5) Detailed description of manipulator  
section:

The manipulator 30A that is installed in the

shop in the tele-inventory system 100 will now be described in detail with reference to FIGS. 5A and 5B. FIG. 5A is a perspective view showing an overview of a manipulator section of the tele-inventory system of FIG. 1, and FIG. 5B is an enlarged perspective view showing the main part of the manipulator section of FIG. 5A. The same reference numbers in FIGS. 5A and 5B as those described above designate identical elements or parts, so any repetitious description is omitted here.

As shown in FIG. 5A, the manipulator 30A includes the camera positioning device 21A composed of the liner-motion rails 22a, 22b and 22c, and the sliding members 23a, 23b and 23c, which have been described with reference to FIG. 4B. The operating end of the manipulator 30A is further fixed to the sliding member 23c, to which the TV camera 20A is fixed.

The operating end of the manipulator 30A consists of joints 31, 32, 33 and 34, arms 35a, 35b and 35c, and a grasping mechanism 36. The joint 31 is fixed to the sliding member 23c, and angularly moves the arm 35a in the direction of the double arrow " $\theta_1$ " by using a non-illustrated motor therein. The joint 32 is fixed to the end portion of the arm 35a and angularly moves the arm 35b in the direction